

SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Acetic Anhydride
CAS number	108-24-7
Synonyms	Acetyl oxide, Acetic acid anhydride, Acetic oxide, Ethanoic anhydride

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Laboratory Chemicals
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1.3 Details of the supplier of the safety data sheet

Company	Lab Alley, LLC 12501 Pauls Valley Road Austin, Texas 78737 U.S.A.
Telephone	512-668-9918
Fax	512-886-4008

1.4 Emergency telephone

Emergency Phone #	US & Canada: 1-800-535-5053	INFOTRAC
	International 1-352-323-3500	INFOTRAC

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3)
Acute oral toxicity (Category 4)
Acute inhalation toxicity - vapors (Category 2)
Skin corrosion/irritation (Category 1)
Serious eye damage/irritation (Category 1)
Specific target organ toxicity (Category 3)

Target organs: Respiratory system

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard statements

Flammable liquid and vapor
Harmful if swallowed
Fatal if inhaled
Causes severe skin burns and eye damage
May cause respiratory irritation

Precaution statements

Prevention Wash face, hands, and any exposed skin thoroughly after handling.
Do not eat, drink, or smoke when using this product.
Do not breathe dust/fumes/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area.
Wear respiratory protection
Wear protective gloves/clothing, eye protection/face protection
Keep away from heat/sparks/open flames/hot surfaces - No smoking.
Keep container tightly closed
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
keep cool

Response Immediately call a POISON CENTER or doctor/physician

Inhalation IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Skin IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse

Eyes IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Ingestion Rinse mouth
Do NOT induce vomiting

Fire In case of fire: Use CO₂, dry chemical, or foam for extinction.

Storage Store in a well-ventilated place. Keep container tightly closed
Store locked-up

Disposal Dispose of contents/container to an approved waste disposal plant

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Lachrymator (substance which increases the flow of tears)

Reacts with water and forms acetic acid

SECTION 3: Composition/information on ingredients

3.1 Components

Chemical name	Common name and synonyms	CAS number	Concentration
Acetic anhydride	Acetyl oxide, Acetic acid anhydride, Acetic oxide, Ethanoic anhydride	108-24-7	>95%

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

If inhaled	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.
In case of skin contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is needed.
In case of eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
If swallowed	If swallowed, DO NOT induce vomiting. If vomiting occurs have person lean forward. Call a physician or poison control center immediately. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. Breathing difficulties. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation: Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

Note to physician: treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media	CO ₂ , dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water
Unsuitable extinguishing media	DO NOT USE WATER

5.2 Specific hazards arising from the substance or mixture

Flammable. Corrosive Material. Water reactive. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors.

5.3 Special protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

5.4 Further information

Hazardous combustion products: Carbon monoxide (CO) and Carbon dioxide (CO₂)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and inhalation of vapors.

6.2 Environmental precautions

Should not be released into the environment. See Section 12 for additional ecological information.

6.3 Methods and materials for containment and cleaning up

Remove all sources of ignition. Do not expose spill to water. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Use spark-proof tools and explosion-proof equipment.

6.4 Reference to other sections

See section 2 for full list of hazard and precaution statements.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Precautions on safe handling

Use only under a chemical hood. Wear personal protective equipment. Keep away from open flames, hot surfaces, and sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not ingest. Do not allow contact with water.

Hygiene measures

No information available

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Keep away from water. Flammables area.

Incompatibilities

Water

SECTION 8: Exposure controls/personal protection

8.1 Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Component	Type	Value	
Acetic anhydride	Ceiling	5 ppm	20 mg/m ³
	TWA	5 ppm	20 mg/m ³

US. ACGIH Threshold Limit Values

Component	Type	Value
Acetic anhydride	TWA	1 ppm
	STEL	3 ppm

US. NIOSH: Pocket Guide to Chemical Hazards

Component	Type	Value	
Acetic anhydride	IDLH	200 ppm	
	Ceiling	5 ppm	20 mg/m ³

8.2 Exposure controls

Appropriate engineering controls

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment.

Personal protective equipment

Eye/face protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Body Protection

Wear appropriate protective clothing to prevent skin exposure.

Respiratory protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Control of environmental exposure

No information available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Pungent
Odor Threshold	No information available
pH	3
Melting Point/Range	-73.1 °C / -99.6 °F
Boiling Point/Range	140 °C / 284 °F @ 760 mmHg
Evaporation Rate	0.46
Flammability (solid)	Not applicable
Flammability or explosive limit	
Upper	10.3 vol %
Lower	2.9 vol %
Vapor Pressure	5 mbar @ 20 °C
Vapor Density	3.5
Density	1.087
Solubility	No information available
Partition coefficient; n-octanol/water	No information available
Autoignition Temp	316 °C / 600.8 °F
Decomposition Temp	No information available
Viscosity	0.91 mPa.s at 20 °C
Molecular Formula	C4 H6 O3
Molecular Weight	102.09
VOC Content(%)	No information available
Flash point	49 °C / 120.2 °F
method	Closed cup

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Potential for hazardous reactions. No hazardous reactions known under normal processing conditions.

10.2 Chemical stability

Stable under recommended storage conditions. Moisture sensitive. Reacts violently with water.

10.3 Possibility of hazardous reactions

None known under normal processing conditions.

10.4 Conditions to avoid

Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.
Exposure to moist air or water.

10.5 Incompatible materials

Oxidizing agents, Strong acids, Strong bases, Water, Strong reducing agents.

10.6 Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂)

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Product Information, Component Information

Acute toxicity

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetic anhydride	630 mg/kg (Rat)	4000 mg/kg (Rabbit)	LC100: 1.67 mg/kg/6h (Rat)
			LC50: 400 ppm/6h (Rat)

Skin corrosion/irritation

Causes burns by all exposure routes

Serious eye damage/eye irritation

Causes burns by all exposure routes

Respiratory or skin sensitization

Causes burns by all exposure routes

Germ cell mutagenicity

Not mutagenic in AMES test

Carcinogenicity

Component	CAS	IARC	NTP	ACGIH	OSHA	Mexico
Acetic anhydride	108-24-7	Not listed	Not listed	Not listed	Not listed	Not listed

Specific target organ toxicity - single exposure

Respiratory system

Specific target organ toxicity - repeated exposure

None known

Reproductive toxicity

No information available

Chronic effects

No information available

11.2 Additional Information

No information available

SECTION 12: Ecological information

12.1 Toxicity

Reacts with water so no ecotoxicity data for the substance is available. Do not empty into drains. Large amounts will affect pH and harm aquatic organisms.

Product		Species	Test Results
Acetic anhydride	LC50	Freshwater Fish	265 mg/L - 48 h
	EC50	Water Flea	55 mg/L - 24h

12.2 Persistence and degradability

Persistence is unlikely based on information available

12.3 Bio accumulative potential

No information available

12.4 Mobility in soil

No information available

12.5 Results of PBT and vPvB assessment

No information available

12.6 Endocrine disrupting properties

No information available

12.7 Other adverse effects

No information available

SECTION 13: Disposal considerations

13.1 Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14: Transport information

DOT (US)

UN number: UN1715
Proper shipping name: ACETIC ANHYDRIDE
Hazard Class 8
Packaging Group II
Subsidiary Hazard Class 3

IMDG

UN number: UN1715
Proper shipping name: ACETIC ANHYDRIDE
Hazard Class 8
Packaging Group II
Subsidiary Hazard Class 3

IATA

UN number: UN1715
Proper shipping name: ACETIC ANHYDRIDE
Hazard Class 8
Packaging Group II
Subsidiary Hazard Class 3

SECTION 15: Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not applicable

CERCLA Hazardous Substance List (40 CFR 302.4)

Acetic anhydride - 5000 lb

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not applicable

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Acute Health Hazard

Fire Hazard

Reactive Hazard

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

Not regulated

FEMA Priority Substances Respiratory Health and Safety in the Flavor Manufacturing Workplace

Not listed

Food and Drug Administration (FDA)

Permitted for the direct acetylation of edible monoglycerides.

US state regulations

US. Massachusetts RTK - Substance List

Listed

US. New Jersey Worker and Community Right-to-Know Act

Listed

US. Pennsylvania Worker and Community Right-to-Know Law

Listed

California Proposition 65

Listed

SECTION 16: Other information

Revision date: 06/19/2024

Revision number: 2

SECTION 17: Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.